MEDIATING EFFECT OF METACOGNITIVE INSIGHT ON THE RELATIONSHIP BETWEEN ADVENTUROUSNESS AND DECISION MAKING STYLES

A
Synopsis
Submitted for the Degree of
DOCTOR OF PHILOSOPHY
In
PSYCHOLOGY
2019

Submitted to:-
DEPARTMENT OF PSYCHOLOGY
FACULTY OF SOCIAL SCIENCES
DAYALBAGH EDUCATIONAL INSTITUTE
(DEEMED UNIVERSITY)
DAYALBAGH, AGRA

By:
ANJUM FATIMA SHAH
Enrollment Number- 173451

Under the Supervision of:-
PROF. KAMALJEET SANDHU
HEAD DEPARTMENT OF PSYCHOLOGY
DEAN, FACULTY OF SOCIAL SCIENCES

DAYALBAGH EDUCATIONAL INSTITUTE (DEEMED UNIVERSITY)
DAYALBAGH, AGRA-282005

CONCEPTUAL FRAMEWORK

We are required to be bold and adventurous in our thoughts and use the appropriate decision making style in order to survive. Numerous individuals live under unhappy situations. Yet, they do not take the initiative to make alterations in their situation because they are conditioned to live in conformity, security and conservation. This collectively appears to give them mental peace, but actually it is damaging to the adventurous spirit. This spirit makes individuals bold enough to use specific decision making styles as situations that arise, but they have some incompetencies also. Eventually, adventurousness is equally important in life as is being intelligent, spiritually aware and witty with good sense of humor. It is believed that secret of success in life is to live dangerously! Nothing makes an individual adventurous as an empty pocket. But to sober individuals, adventurousness, time and again may seem insanity. Adventurousness as an aspect of personality in an individual promotes extreme changes, innovation and uncertainty, requiring training that focuses on forming competence to address, manage, cope and adapt to any complexity. Adventurous individuals being ambitious cannot always depend on their facilitators for acquiring knowledge. To hold on to such situations, it becomes essential for individuals with adventurousness to become aware of their incompetencies, and have an insight of their deficiencies.

Adventurous, daredevil, venturesome, daring etc. denote in common exposing oneself to danger and individuals who are adventurous are inclined to adventure. Faustino (2015) believed that "engaging in an unusual and exciting, typically hazardous, experience or activity" is adventure. According to Banson (1999) "If happiness is the goal and it should be, then adventures should be priority."

Eventually, adventurous experiences create psychological arousal, which can be interpreted as negative (e.g. fear) or positive (e.g. flow). For some people, adventure becomes a major pursuit itself as they carry adventurousness as an aspect of their personality. Malraux (1933) states "If a man is not ready to risk his life, where is his dignity". Also, Cawley III, Martin and Johnson (1999) gave virtues of Adventurousness as: not being influenced by people or society norms; enjoying excitement of risk

through high-risk activities; not worrying about others; expecting each human to be responsible for self; gifted with the art of winning over and influencing people; keeping on moving and exploring; not worrying about finding work; living by talents, skills, ingenuity and wits; being high-spirited and making mischief; courageous, physically bold and tough; standing up to anyone who dares to take undue advantage; living in the present, experiencing life now; neither feeling guilty or anxious about the past or future. Oldham (2017) defined the adventurous personality styles consisting of eight characteristic traits and behaviors i.e. non-conformity; challenge; mutual independence; persuasiveness; wanderlust; true grit and no regrets.

Eysenck(1976) believed that personality differences are an outcome of genetic inheritance and he focused on temperament as an aspect of personality, present from birth and devised a temperament-based theory. He considered the possibility of some aspects of personality to be learned. A highly adventurousness individuals as described by Eysenck (1976) are solitary, not caring for people; often troublesome and not fitting in anywhere. Such individuals may be cruel and inhumane, lacking in feeling empathy and altogether insensitive. The high adventurous scorer is hostile and aggressive with others and even with own loved ones. They like odd and unusual things and make fool of people and upset them. As far as children are concerned, a fairly congruent picture of an odd, isolated, troublesome child; glacial and lacking in human feelings for his or her fellow-beings and animals; aggressive and hostile, even to near and dear ones, is obtained. Such children try to make up for lack of feeling by indulging in sensation-seeking "arousal jabs" without thinking of the dangers involved. Socialization is a concept which is relatively alien to both adults and children; empathy, feelings of guilt, sensitivity to other people are notions, which are strange and unfamiliar to them.

Components of Adventurousness

1. **Risk taking: -** Individuals typically experiment with new behaviors exploring their identity and independence. Moreover, certain degree of risk taking is essential for personal growth and

development as it facilitates individuals to test their limits, learn new skills, develop competence and self-worth and assume greater responsibility for their life. Risk taking behavior can be problematic and requires intervention at times when it interferes with normal development; poses serious risks to the individual's health, safety and emotional wellbeing; impairs healthy functioning and becomes an established part of someone's lifestyle. This type of risk taking is sometimes known as negative risk taking behavior. The parts of the brain that handle planning and impulse control don't completely mature until the age of about twenty five. This means young people are more likely to make quick decisions without thinking through the consequences. Of course, young people often base their decisions to get involved in potentially risky behaviors and activities on peer pressure and a desire to fit with a group.

2. **Impulsiveness:** - Shalev and Sulkowski (2009) explain the word impulse as the urge to do something. Impulsiveness can be defined as a particular way of perceiving the world, where there is a predisposition to act uncontrollably and fast, when faced with an event or a stimulus. With this there is a flaw in an individual's analytical judgment meaning he/she doesn't think about the consequences of their actions. Impulsive individuals are inclined towards acting on the spur of the moment, in a carefree manner, make often premature decisions and are changeable and unpredictable.
3. **Irresponsibility:-** Irresponsible individuals are overly casual, thoughtless, careless of protocol, unpredictable, not doing things with consideration for the consequences of actions or attitudes; and are socially unreliable. Low scorers on this dimension are contentious, reliable, trustworthy and serious-minded.
4. M**anipulativeness:** - is social influence focusing on changing the behavior or perception of others through indirect, deceptive tactics. Such individuals are detached, calculating, shrewd, worldly, expedient and self-interested in their dealings with others. They often do things at the expense of

others with exploitative and devious methods. Hufft (2018) defines manipulation as deliberately influencing or controlling the behavior of others to one's own advantage by using charm, persuasion, seduction, deceit, guilt induction or coercion. It is the conscious and un-altruistic use of destructive or self-oriented relationships or behaviors to establish power, achieve goals, or create chaos. Manipulation tactics can include flattery, praise, empathy, sympathy, helplessness and sensitivity. It is usually the means to an end. This end can be for entertainment or to relieve boredom.

5. **Sensation seeking: -** is also called excitement-seeking, is the tendency to pursue sensory pleasure and excitement. It's the trait of people who go after novelty, complexity, and intense sensations, who love experience for its own sake, and who may take risks under such experience. "They love bright lights, hustle- bustle and like to take risks and seek thrills." Sensation-seekers are motivated by the immediate gratification sensory experiences can provide."

6. **Tough mindedness: -** Tough-minded individuals acknowledge the fact that circumstances change over time so they embrace it. A tough-minded person can face difficult facts and long odds with definite optimism. These tough-minded optimists as per Mc Ginnis (2014) may be of average intelligence and looks, but they know ways to keep themselves motivated, and they approach their problems with a can-do philosophy. They are tolerant, strong, positive and emerge from tragedies effectively. They rely on reason rather than intuition.

7. **Practicality**: includes individuals interested in doing things rather than thinking about them. Philosophical questions do not interest such individuals and do not introspect about their behavior and thoughts.

All these dimensions state the importance of the temperament of an individual that is associated with the mind also. The increasing interest in understanding the role of the mind is evidenced in psychological states. It is significant enough to connect thoughts to the temperament of an individual to explore self. The individuals have the capacity to know themselves through self-observation. Moreover, despite the

significance of concepts of self-awareness, self-monitoring, and self-direction in humanities, Flavell (1979) formally proposed the term metacognition. The primary interest was to focus on issues including the effects (potentially positive and negative) of learners', awareness of their learning and the cognitive processes enabling learning to progress. Moritz , Lysaker, et.al. (2018) noted that Flavell's original model of metacognition extends beyond the educational context. The 'metacognition' concept was introduced in 1979 by Flavell. Metacognition is defined as "the activity of monitoring and controlling one's cognition and using this cognitive process to learn and remember."

To be precise, being aware of and in control of one's own mental processes, is metacognition. Metacognition ranges across ages and subjects, where each individual at some or the other point of time indulges in "thinking about one's own thinking' that enables them to understand their cognitions. Saxe and Offen (2010) described two meanings for the term with reference to disorders. The first is 'attributive metacognition', which involves the capacity to attribute beliefs and desires to oneself alongside a variety of self-knowledge. The second aspect 'strategic metacognition', denotes the ability to monitor and control ongoing mental activities. Here, the researcher is interested in strategic aspects of metacognition i.e. mental activities and plans and actions taken. Individuals developing metacognition are able to assess their thought processes and reframe ways they think to adapt to new situations. During this process they may suddenly get an insight to discover some aspects of their cognition that was present as a part of their cognition, but they were not exposed to earlier. This is metacognitive insight i.e. sudden insight about one's own cognitions. Metacognition is a regulatory system for understanding and controlling one's cognitive performance.

Apparently, "Going meta" means being an audience of our own intellectual performance. While using metacognition, individuals advance in understanding of the situations, processes and methods that are appraised best for them. Metacognitive insight does not depend on the trial and error kind of thinking process but suddenly catch up the correct and the best method using 'thinking about one's own thinking.'

Professionals with low metacognitive insight will not be able to understand their cognitions in sudden emerging situations inviting to take decisions as they are unable to monitor their own performance or use information to determine the difficulty of a task while in contrast to this successful professionals identify their goals, using metacognitive strategies, and are able to self- monitor and self- assess. Inability to actively monitor and regulate their own cognitive processes will make such professionals lethargic in their work also.

So, for all age groups, metacognition is crucial for effective independent cognitive functioning, as it fosters forethought and self-reflection. Metacognitive insight enables to assess the components of decision making in situations and while the metacognitive thinkers are actively thinking they have 'Aha' experience that allows taking a decision at instant. They will know when and how to use strategies next time identical situation arises in their profession. Metacognitive insight includes two components; knowledge of metacognition and regulation of metacognition. Metacognition is the knowledge and awareness of one's cognitive processes (Flavell, 1976). The ability to monitor, regulate, evaluate one's thinking instantly and use it in decision making or problem solving, is metacognitive insight. In this context, the investigator got interested in the area of metacognition. Also that Metacognition improves the learning ability, retention and achievement. It is interesting to explore how metacognitive insight is important and impacts decision making styles in a given situation for the individuals i.e. students in professional course preparing the take up challenging jobs or open their own ventures. Investigator decided to check the level of metacognitive insight of students in a professional programme. Knowing their metacognitive insight will be helpful for the students to understand the ways they can improve by means of appropriate strategies and techniques their metacognitive skills to further enhance the use of their decision making style and to some extent control their excessive adventurous temperament to some extent.

Every day these individuals are presented with numerous situations where there is a constant need to make decisions. The decisions that they make play a significant role in shaping their lives. Made consciously or unconsciously decisions are tools that are used in everyday life as individuals face opportunities, threats and uncertainties. The success in the life roles played depends on the decisions made (Hammond and Raiffa, 1999). All of us make decisions every day. Some decisions are only of minor importance; while others have an impact on one's life for a long time to come. Some decisions not only affect self, but will have long run implications for others as well. Understanding how our decision making style affects others helps to take serious action to move towards success. Decision making can be defined as "the cognitive process, which results in the selection of a course of action among several alternative scenarios."

The term decision style is "the way a person uses information to formulate a decision" (Rowe and Mason, 1987) Decision making style is "a cognitive process, which includes one's personality in relation to one's needs, values, and self-concept." Harren (1979) revealed that decision making style reflects an "individual's characteristic for perceiving and responding to a decision making process." The style of decision making depends on learning process and experience. Driver, Brousseau and Hunsaker (1993) explained that the difference amongst individuals while making decision depends on the information used and focus i.e. the solutions considered. Rowe and Mason (1987) stated that decision style framework is defined by three key factors like the way individuals think about a problem; communicate to others and expect others' behaviour to affect their performance. The operational definition for decision making style is "a habitual pattern or preferred way of doing something that is consistent over time and across activities" (Sternburg and Lifang, 2001).

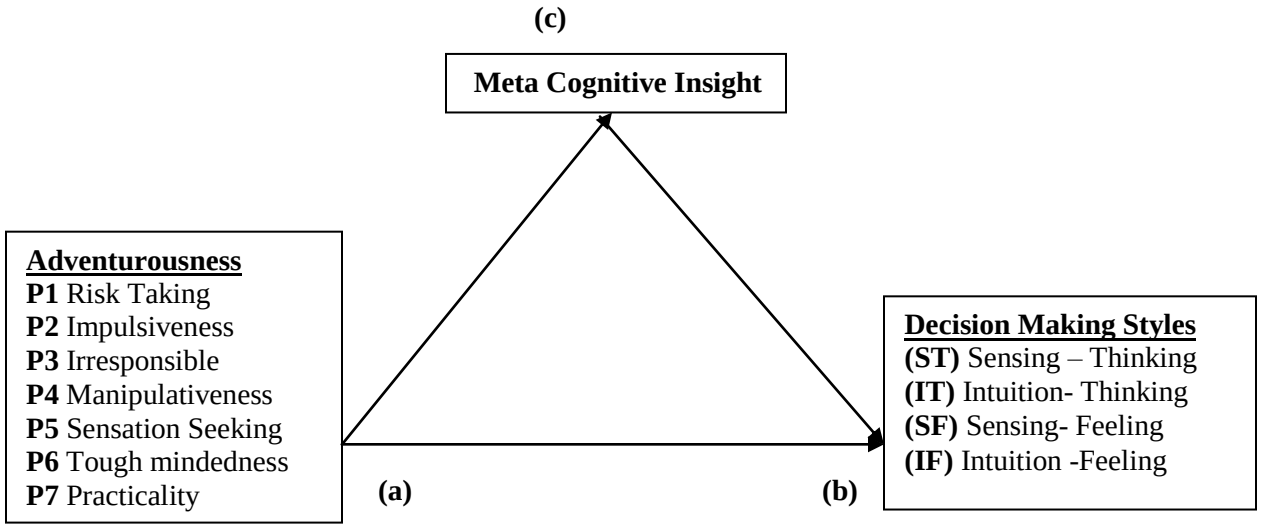
Decision making style is called "a situation which includes the approach, reaction, and action of the individuals who is about to make a decision" (Phillips, Pazienza and Ferrin, 1984 as cited in Deniz, 2011). It is one of the most important elements in the functioning of any situation. Every day we face

numerous alternatives and have to make a decision about which one to select. A well-crafted decision can help in any situation to move in the right direction and affect individuals to a large extent. Professionals need to plan, organize and implement different strategies to meet the goals in the best possible way. These are all complex interrelated tasks and one decision can have immense implications on numerous aspects. Thus, decisions that are taken have a significant impact on the success (Forgionne 1991). The success or failure depends to a great extent on decision making. Thus to be effective, one needs to be aware of their decision making styles so that an attempt can be made to evolve and work on effective styles to be better equipped to make the required decisions. From a student's point of view, decisions made is important when they discover their decision making style and then further use it for their developmental purposes and even for executing the right person-job fit at their end. Research suggests that individuals have different decision making styles, with high predisposition towards one specific style. The quality of decisions made influence the effectiveness and success of the decision maker (Leonard, Scholl, and Kowalski 1999).

Decision-making style is defined by "dependence upon hunches, feelings, impressions instinct experience and gut feelings." Moreover, decision making style could be intellectual or emotional, rational or irrational. Although no one fits completely into just one style, individual's characteristics allow fit into one or two styles. Each style focuses at decisions in a different ways, where each style involves processing the information differently, on which decision is based.

Scott and Bruce (1995) have identified two main approaches to decision-making style. Firstly, "decision-making styles can be understood as a habitual pattern which individuals use in decision-making." Secondly, "decision-making styles can be understood as individuals' characteristic mode of perceiving and responding to decision-making tasks." They proposed decision-making styles as "the learned habitual response pattern exhibited by an individual when confronted with a decision situation."

Fig.1 Path to test a mediating effect of relationship between adventurousness and Decision Making Style



Considering all this discussion related to the variables for the study, connection is evident between the variables, which raises the research questions: *Is there any meditational effect of metacognitive insight on the relationship between Adventurousness and Decision making styles? Is this mediation by metacognitive insight full or partial? Whether the metacognitive insight associate with Decision making styles of the students doing a professional course?*

Rationale of the study

Being adventurous is one of our core drives as humans as we can see seeking novel experiences is one of the earliest behaviors that babies exhibit. Even more explaining happenings is difficult if novel experiences are absent. A well-known developmental milestone for the age of two months is that babies will begin to cry if their environment doesn't change they will experience pain simply from the boredom of their situation. We humans naturally learn to adventurously investigate the world. Every milestone contains major elements of curiosity, adventure, and seeking understanding. Being adventurous is that we have in mind that life is not a straight line; it has its own ups and downs. We never stop till the end because we know its adventure and at the end when we look back we would have beautiful memories with a variety of experiences. Being adventurous keeps us young, alive, vibrant and full of magnetism.

Seen from an evolutionary point of view seeking adventure can be good for the society because, the insights, knowledge and wisdom derived from adventures or risk seeking behavior, can benefit the individuals in the long run. In this research the researcher will make an effort to identify the contribution of adventurousness in decision making styles exploring the component of adventurousness that has dominant role in determining decision making style based on temperament, because decision making is the learned habitual response pattern exhibited by an individual when confronted with a decision situation. It is not a personality trait, but a habit-based propensity to react in a certain way in a specific decision context. The success of an individual also depends upon his or her own decision making style. One of the major aspects of decision making seems to be metacognitive insight. Metacognitive insight seems to have a significant role in decision making; it helps an individual to make appropriate decisions according to the demand of the situation by using different styles.

Some of the studies reviewed to generate understanding of the connections that the variables share are summarized below in Table 1.

Table 1. Summary and Outcomes of the review of related literature:

Author's Name & Year	Title/Variables	Outcomes
Barreno, Enrique, Carmen & Pedro Juan, (2018).	Relations between facets and personality domains with impulsivity: New evidence using the *DSM-5* Section III framework in patients with substance use disorders.	The relationships between personality domains and impulsivity behave similarly to their five-factor equivalents for some dimensions but not for negative urgency, which might indicate the lack of specificity of this dimension of impulsivity on this type of patients.
Dohrmann, Katalin, Schauer, Maggie & Thomas (2017).	Relations between traumatic stress, dimensions of impulsivity, and reactive and appetitive aggression in individuals with refugee status	For reactive aggression there was a direct link between childhood maltreatment and (a) PTSD symptoms and (b) marginal sensation seeking. Childhood maltreatment and sensation seeking best predicted appetitive aggression. There was no

		evidence for indirect effects of impulsivity.
Dubas, Baams, Doornwaard & Van Aken, (2017).	Dark personality traits and impulsivity among adolescents: Differential links to problem behaviors and family relations.	Results revealed 3 personality profiles: (1) a dark impulsive group (13.9%), with high scores on all 3 traits (CU, GM, and DI) that were stable over time; (2) an impulsive group (26.1%), with high and increasing levels of impulsivity and relatively low scores on CU and GM; and (3) and a low risk group (60.0%), with relatively low levels on all 3 personality characteristics. Impulsivity decreasing over time. Compared with adolescents in the impulsive group, those in the dark impulsive group showed the highest levels of risk behaviors.
Griffin, Lynam & Samuel (2017).	Dimensional Conceptualizations of Impulsivity. Personality Disorders: Theory, Research, and Treatment.	The results showed that although the DSM–5 trait model captures well a broad conceptualization of impulsivity, some lower-order facets lack specificity.
Boer, Peeters & Koning (2017).	Experimental Study of Risk Taking Behavior Among An Adolescents: A Closer Look at Peer and Sex Influences.	Results showed that (a)adolescents took significantly more risk when they completed the BART with peers than when they completed the risk taking task individually. Results suggested that boys appear to be more susceptible to the influence of peers on risk taking behavior than girls.
De Boer & Harakeh(2017).	The Effect of Active and Passive Peer Discouragement on Adolescent Risk taking: An Experimental Study.	The results revealed that, compared to a situation with no peer discouragement, adolescents took significantly less risk only when they encountered a

		combination of active and passive peer discouragement; hence, when peers practiced what they preached. No gender differences were found in the effect of passive and active peer discouragement on risk taking. The results also showed that digital peer messages play a promising role in diminishing adolescent risk taking.
Uzaina & Srivastava. (2016).	A Study on Risk Taking Behavior among Adolescents and Their Attachment with Parents and Peers.	The results showed that females were more attached with their parents and peers in comparison to males. Risk taking behavior and sexual activities were found to be higher among males than females. It was found that in females the desire of indulging in substance use and sexual activity was low as compared to males. Positive peer pressure was found helpful in keeping females away from risk taking behavior.
Dorothea (2016).	Machiavellianism and manipulative interpersonal behavior in children.	The major findings were that High Mach subjects (a) were more successful, (b) used manipulative strategies more frequently, and (c) were judged as sounding more effective in general than Low Mach subjects. Sex was found to interact with Mach and success in terms of the strategies employed and the affective and cognitive consequences of the behavior.
Frank, Engelhardt, Daniel,	Sensation seeking and	Results indicated that

Patterson & Jennifer (2016).	impulsive traits as personality endophenotypes for antisocial behavior: Evidence from two independent samples.	sensation seeking and impulsive personality are causal endophenotypes for ASB, or merely index genetic liability for ASB.
Politova & Hilendarski, (2014).	The sense of adventure as a motivation for a prosocial behavior.	As a result of a stepwise regression analysis researcher found that both of the independent variables have a statistically significant influence on the self- evaluation for prosocial behavior as a dependent variable.
Anneke, Haddad, Harrison, Norman & Jennifer. (2014).	Adolescent and adult risk-taking in virtual social contexts.	For high-risk gambles (but not medium-risk or even gambles), adolescents made more risky decisions under peer observation than adults. Adolescents, but not adults, tended to resist 'safe' advice for high-risk gambles. Although both groups tended to follow 'risky' advice for high-risk gambles, adults did so more than adolescents. These findings highlight the importance of distinguishing between the effects of peer *observation* and peer *advice* on risky decision-making.
Jonathan, Rolison, Hanoch & Wood (2014).	Risk-Taking Differences Across the Adult Life Span: A Question of Age and Domain.	Results revealed that risk-taking tendencies in the financial domain reduce steeply in older age (at least for men). Risk taking in the social domain instead increases slightly from young to middle age, before reducing sharply in later life, whereas recreational risk taking reduces more steeply from young to middle age than in later life. Ethical and health risk taking reduce

		relatively smoothly with age. Findings also revealed gender differences in risk taking with age. Financial risk taking reduced steeply in later life for men but not for women, and risk taking in the social domain reduced more sharply for women than for men.
Dimdins, Sandgren & Montgomery (2014).	Uncertainty avoidance and tough-mindedness as the psychological bases of political orientation.	The results showed that the network of political beliefs and attitudes that represents individual political orientation can be largely reduced to the basic psychological variables of uncertainty avoidance and tough-mindedness, and that both dimensions of political orientation are separable, both theoretically and empirically.
Leea, & Tsengb (2014).	How personality and risk-taking attitude affect the behavior of adventure recreationists.	Positively and significantly influence their risk-taking attitude in white water rafting and scuba diving activities. Extraversion and openness traits positively and significantly influence the risk-taking attitude of both groups of recreationists, but a negative relationship between conscientiousness and risk-taking attitude was found only in scuba divers.
Ryumshina, Liubov, & Nagibin, (2013).	Family Influence On Formation Of Children's Manipulative Attitudes.	Results indicated that 29% males and 31% females were significantly high Machiavellian tendencies. Moreover, almost 40% of the children also had high level of Machiavellian tendencies, suggesting the influence of the manipulative attitudes of the parents on the formation

		of such in children. Further analysis confirmed that. if the father's level of Machiavellianism was high, the child also had a strong tendency. The high level of Machiavellianism of the mother also influenced the level of the child's Machiavellianism. In the group of parents with high scores in Machiavellianism scale a positive correlation with the scores of Machiavellianism in children is established, the higher Machiavellianism is in the parents, the higher it is in the children ($p \leq 0.05$).
Leslie & Chris (2012).	The social desirability of toughmindedness: A study among undergraduates.	Findings revealed that social desirability was associated with lower neuroticism scores and social desirability was associated with elevated psychoticism scores.
Geertjan, Gretchen & Margaret (2006).	Co-occurrence of depressive moods and delinquency in early adolescence: The role of failure expectations, manipulativeness, and social contexts	Results showed that depression and delinquency co-occurred in about 9% of respondents, that depression and delinquency followed separate developments throughout early adolescence. Development of co-occurring depression and delinquency was positively linked to a later constellation of high failure expectations and manipulativeness across a 2-year period. Additionally, the development of combined failure expectations and manipulativeness was positively linked to a later co-occurrence of depression and delinquency across a 2-year period. Further, the co-

		occurrence of depression and delinquency was predicted by lower-quality relationships with parents and negative attitudes towards school and teachers, whereas a constellation of high failure expectations and manipulativeness was linked to earlier negative interactions with parents and feeling isolated from peers.
Jain, Tiwari & Awasthi (2017).	Impact of Metacognitive Awareness on Academic Adjustment and Academic Outcome of the Students.	The results of the study demonstrated that the scores on declarative knowledge, procedural knowledge, conditional knowledge, planning, information management, monitoring, debugging, evaluation components of metacognition and overall metacognitive awareness accounted for significant variance in the scores of academic life style, academic achievements, overall academic adjustment and academic outcome.
Jaleel & Premachandran (2016).	A Study on the Metacognitive Awareness of Secondary School Students.	Findings revealed that the level of higher secondary students metacognitive awareness was equally distributed among the five categories of participants. Moreover, no significant difference was observed in metacognitive awareness of higher secondary students who were categorized on the basis of gender, locality, and type of school management.
Talekar & Fernandes (2016).	A Study of Metacognitive Awareness Among Secondary School Students in Mumbai	The survey showed that the students have average metacognitive awareness. The result also showed that

		there is no significant difference in the metacognitive awareness among the girls and boys in secondary schools in Mumbai.
Vang (2015).	Exploring general versus task – specific assessments of metacognition in university chemistry students: a multi trait – multi method analysis."	Findings showed that significant correlations exist among task performance, calibration accuracy, and concurrent metacognition. Confidence judgment was not associated with task performance or the other metacognitive measurements.
Diaz (2015).	Training in Metacognitive Strategies for Students' Vocabulary Improvement by Using Learning Journals.	The results indicated that metacognitive strategy training has positively contributed to vocabulary acquisition skills, as participants were able to raise consciousness about some learning strategies and the use of metacognitive strategies to increase their vocabulary learning.
Van de Kamp & et.al (2015).	The effects of explicit instruction of meta-cognition on students' divergent thinking.	Results showed that explicit instruction of meta-cognitive knowledge had a positive effect on fluency and flexibility, but not on originality. The study implies that in the domain of visual arts, instructional support in building up meta-cognitive knowledge about divergent thinking may improve students' creative processes.
Yerdelel-Damar, & Haki (2013).	"Relations of gender and socioeconomic status to physics through metacognition and self efficacy".	The study revealed that metacognition and physics self efficacy could explain gender and socio-economic status related differences in physics achievement. In

		addition, it was observed that physics self efficacy mediated the relations of metacognition to physics achievement. It also reported that metacognition contributed to physics achievement through physics self efficacy.
Belet & Guven (2011).	A descriptive survey study in order to determine primary education teacher trainees' epistemological beliefs; the use of metacognitive strategies; and the relationship between epistemological beliefs and metacognitive strategies.	The results indicated that the beliefs of primary education teacher trainees' on "learning depends on effort" were developed/matured more in comparison to the beliefs on "learning depends on skills" and the beliefs on "there is a single truth." Significant differences were found among their beliefs in terms of gender, grade, and the university they attend; while no significant relationship was found between their academic achievement and beliefs. Results also revealed that among the metacognitive strategies they used the most, primary education teacher trainees' used "self control" "cognitive strategy", "self evaluation" and "self-awareness" respectively. Significant differences were found among metacognitive strategies they used in terms of gender, grade, and the university they attend while no significant relationship was found between their academic achievement and metacognitive strategies they used.

Kumar & Gautam (2018).	Decision Making Styles among Professor in Central University of Bihar - An empirical Study of Predictors.	Results revealed that there is a direct and positive relationship between conscientiousness and a rational decision making style, between neuroticism and an avoidant decision making style, openness to experience and an intuitive decision making style. A demographic factor, age and its impact on intuitive decision making style was tested which indicated that no such relationship exists
Bavol & Orosová,(2015).	Decision-making styles and their associations with decision-making competencies and mental health.	Low but significant relationships between the decision-making styles were found. Two decision-making styles served as significant predictors of the general decision-making competency (avoidant and spontaneous) and another two were found to predict mental health. The intuitive decision-making style was a protective factor and the avoidant style was a risk factor.
Okike & Olanrewaju (2014).	Problem Solving and Decision Making: Consideration of Individual Differences in Computer Programming Skills Using Myers Briggs Type Indicator (MBTI) and Chidamber and Kemerer Java Metrics (CKJM)	Personality traits such as Introverted Sensing Feeling Perceiving(ISFP), Introverted Intuitive Thinking Perceiving (INTP), Extroverted Intuitive Feeling Perceiving (ENFP), Introverted Sensing Feeling Judging (ISFJ), Extroverted Intuitive Thinking Judging (ENTJ), Extroverted Sensing Feeling Judging (ESFJ), Extroverted Intuitive Feeling Judging (ENFJ), Introverted Sensing Thinking Perceiving (ISTP), and Introverted Intuitive Feeling

		Perceiving(INFP) are likely to be averagely good programmers while individuals with Extroverted Sensing Feeling Perceiving (ESFP) and Extroverted Sensing Thinking Perceiving (ESTP) traits are likely to make poor programmers.
Ahmed, Hasnain & Venkatesan (2012).	Decision Making in Relation to Personality Types and Cognitive Styles of Business Students.	Intuitive personality type had a significant relationship with the conceptual decision style. The personality type 'thinking' showed positive correlation with directive decision style, but negative correlation with behavioral. 'Feeling' showed positive correlation with behavioral decision style. Personality type, 'judging' had a significant relationship with analytical decision style, whereas, personality type, 'perceiver' had an inverse relationship 'feeling' showed positive correlation with behavioral decision style. Further, it was found that systematic and intuitive cognitive styles had an inverse relationship with behavioral decision style. Though systematic cognitive style had a significant relationship with analytical decision style.
Kristine & Tom (2003).	Decision-Making Styles: An Exploration of Preferences of On- and Off-Campus Faculty.	Highly significant different on preference in the "judging" function, with 72% of the specialists indicating a thinking preference and 60% of agents indicating a feeling preference.

GAP ANALYSIS AND RESEARCH DIRECTIONS:

The above researches showed that the personality traits plays significant role in the components of adventurousness such as risk taking behavior, impulsivity, sensation seeking, toughmindedness, manipulativeness and others . Researches have also shown that metacognitive awareness and metacognitive strategies influence academic life style, academic achievements, and learning strategies.

They also found that intuitive decision making style is protective factor for mental health whereas an avoidant decision making is risk factor. Introverted, Sensing, Thinking, Judging (ISTJ) appear to have the best programming skill followed by Introverted, Intuitive, Feeling, Judging. Intuitive personality type significantly related with the conceptual decision style.

During the review, although the reflection of adventurousness with decision making styles is found and give some direction, but the present research is important for the following reasons:

- No previous research is available specifically on metacognitive insight although metacognition has been studied in generally.
- None of the researches provide an evidence on the association between adventurousness and decision making styles.
- Studies demonstrating the contribution of adventurousness in determining metacognition were not found by the researcher during the review.
- Few studies have studied and demonstrate the role of preferred style of decision making in different situations, mediating effects are not analysed or reported in the research.
- Therefore, the present study intends to make an assessment of mediating effect of metacognitive insight on the relationship between adventurousness and decision making styles.

RESEARCH METHOD

Objectives:-

- To study the association between adventurousness and decision making styles.
- To study the association of metacognitive insight and decision making styles.
- To study the association of adventurousness and metacognitive insight.
- To examine the contribution of adventurousness and its dimensions in determining decision making styles.
- To analyze the mediation of metacognitive insight on the relationship between adventurousness and decision making styles.

Hypotheses:-

- There will be a significant association between adventurousness and decision making styles.
- There will be a significant association of metacognitive insight and decision making styles.
- There will be a significant the association of adventurousness and metacognitive insight.
- Adventurousness and its dimensions will be contributing significantly in determining decision making styles.
- Metacognitive insight will be significantly mediating the relationship between adventurousness and decision making styles.

Variables:

Independent Variable: Adventurousness: (1)Risk taking, (2)Impulsiveness, (3)Irresponsibility, (4)Manipulativeness, (5)Sensation seeking, (6)Tough-mindedness, (7) Practicality.

Dependent Variable: Decision making styles: (1) Sensing- Thinking, (2) Sensing-Feeling, (3)Intuitive-Thinking, (4) Intuitive –Feeling.

Mediating Variable: Metacognitive insight.

Operational Definitions of the terms used:

(1) ***Adventurousness*:** as described by Eysenck (1976) are solitary, not caring for people; often troublesome, tough-minded, sensation seeking, impulsive, manipulative, irresponsible, risk taking, practical and not fitting in anywhere kind of individuals.

(2) ***Decision Making Style***: is preference within personality type that has an effect on decision-making, constituting a preferred style based on temperament of individuals (Myers and Briggs 1985). Also "a habitual pattern or preferred way of doing something that is consistent over time and across activities" (Sternburg and Lifang, 2001).

(3) **Metacognitive Insight**: Metacognition is "thinking about one's own thinking'. Metacognitive insight does not depend on the trial and error kind of thinking process, but suddenly catch up the correct and the best method using 'thinking about one's own thinking.

SAMPLE DESCRIPTION:

***Inclusive Criteria*:** The sample will comprise of 400 students from professional courses selected conveniently from universities and colleges in and around Agra city. Their age will range between 20 to 30 years. Both males and females will be included in the sample.

Justification of sample

(1) The population is infinite.

(2) The study is related to male and female students from professional courses as target population hence the judgment of the researcher will be there to draw the sample from the population.

Sample size: - The following sample size formula for infinite population is used to arrive at a representative number of respondents. (Godden, 2004).

$$S = Z \times p(1-p) / M^2$$

Where S= sample size for infinite population.

Z= Z value (e.g. 1.96 for 95% confidence level.

p= population proportion (assumed to be 0.5 (50%).

M= margin of error at 0.5% (0.05).

$S= 1.96^2 \text{ X } 0.5 (1-0.5) / 0.05^2$

$= 3.8416 \text{ X } 0.25 / 0.0025$

$= 0.9604 / 0.0025 = 384 \approx 400$

A sample size of 384 is suggested by above formulae given by Godden, for making it the true representative of population therefore a sample size of approximately 400 students will be taken for conducting this study successfully.

***Exclusive Criteria*:** Age range below 20 and above 30 will be excluded from the selection of a sample. Students with any kind of mental or physical difficulties as observed in their medical records will be excluded.

TOOLS:

(1) **Eysenck Personality Profiler (EPP):-** The Eysenck Personality Profiler (EPP) measures 21 traits of personality that is consistent with the three major dimensions of personality as defined by Eysenck. The questionnaire was developed by Eysenck and Wilson (2008). Psychoticism: (called Adventurousness in the EPP) includes the dimensions of Risk- Taking, Impulsiveness, Irresponsible, Manipulative, Sensation- Seeking, Tough- Mindedness, Practical. The high score is like to live dangerously, carefree, unpredictable, careless to protocol, detached, seeking thrills in life, interested in doing things rather than thinking about them, some people would describe them as "macho" in personality. EPP is highly reliable and valid tool to measure personality.

(2) **Myers-Briggs Type Indicator** (MBTI) by Myers -Briggs (1998) is a psychometric questionnaire measuring psychological preferences regarding the way people perceive the world and make decisions. These preferences were extrapolated from the typological theories proposed Jung (1921) in his book *Psychological Types*. Jung theorized that there are four principal psychological

functions by which we experience the world: sensation, intuition, feeling, and thinking. One of these four functions is dominant most of the time. There are total 93 questions divided in four parts in the type indicator. The MBTI instrument sorts preferences and do not measure trait, ability, or character. The MBTI tool is different from many other psychological instruments and also different from other personality tests. The best reason to choose the MBTI instrument to discover decision making type is that hundreds of studies over the past 40 years have proven the instrument to be both valid and reliable. In other words, it measures what it says it does (validity) and produces the same results when given more than once (reliability). A confirmatory factor analysis was also conducted on Form M, using the data from the national sample (N=3,036) .The adjustment goodness of fit is 0.949. The median of the fitted residuals was-.008. These results indicate an excellent fit to the four factor model. The correlation of MBTI- From G preference scores and the Millon Index of Personality Styles, range in between 0.75 to -0.51. Internal consistency based on Split- half reliability range from 0.92 to 0.89 and internal consistency reliability is 0.91.

(3) Metacognitive Insight:- Metacognitive insight scale will be constructed by the researcher including aspects like self- awareness, self- regulation, self- reflection and self- evaluation.

Research Design: Measurement-of meditation design (type of Correlational design) will be used for this research.

Statistical Technique: Data analysis will be analyzed using correlation, regression analysis and meditational analysis.

IMPLICATIONS OF THE STUDY

The present study focuses on the challenges and adventures of students in professional courses that they will face at workplace later because life is full of adventures, as Amatt. (2000). stated “Adventure is not hanging on a rope off the side of a mountain. Adventure is an attitude that must be applied to the day to

day obstacles in life." Especially in today's fast paced world where technology grows leaps and bounds and individuals need to take risks and make decisions every now and then for being successful in their life and work. Individuals have to make several decisions related to their course choice, work on start up plans on which the success of a venture and an individual depends. It is an analytic process, which involves many mental activities such as memories, imagination, thinking, judgment and intelligence etc. To make decisions accurate or appropriate to the situation individual must have to think about one's own thinking, which is known as metacognition. If a person is not adventurous or he or she will not take risks in their life, new inventions or discoveries will not take place ever. In adventurous situations, where risks are involved, individual is sometimes not able to make decision, where metacognitive insight helps to find solutions. Metacognitive insight makes the individual competent enough to take risky decisions by making them confident about self and aware of all the related aspects. Without having a metacognitive insight a person is not capable enough to take appropriate decisions to solve the challenging situations so it is necessary to identify, which decision making style associate with a particular adventurous behavior dimension also monitoring mediating effect of metacognitive insights if playing any role in the association of adventurousness and decision making style of students in professional programmes. The study has both individual and organizational implications as these trained professional will some or the other day be a part of the work force or will be employers to other individuals.

References:-

- Adventurous (Merriam-Webster 1984). Webster's New Dictionary of Synonyms: A Dictionary of Discriminated Synonyms with Antonyms and Analogous and Contrasted Words. Springfield, MA: Merriam-Webster. Retrieved on March 18, 2019 from www.ptypes.com/adventurous.html
- Ahmed, A., Hasnain, N., & Venkatesan, M. (2012). Decision Making in Relation to Personality Types and Cognitive Styles of Business Students, *The IUP Journal of Management Research, 1* (2), 20-29.

- Aikins, D. E., & Michelle ,G. C. (2001). Cognitive theories of generalized anxiety disorder. *The Psychiatric Clinical of North America, 24* (1), 57-71.
- Amatt, J. (2000). Adventurousness quotes. Retrieved on March 10, 2019 from https://www.adventureinyou.com>20.
- Anneke, D. M. ,Haddad, F., Harrison, T. , Norman, J., & Laul,Y.F. (2014). Adolescent and adult risk-taking in virtual social contexts. *Frontiers in Psychology,5*(6), 1-7
- Anouk, B., & Harakeh, Z. (2017).The Effect of Active and Passive Peer Discouragement on Adolescent Risk taking: An Experimental Study. *Journal of research on adolescence,27*(4), 878-889 .
- Banson, R. (1999). If happiness is the goal. Retrieved on March 10, 2019 from https://www.adventureinyou.com>20
- Barreno, M., Enrique, D.B., Carmen, P.M., Pedro Juan, G.B., & Jesus, L.(2018). Relations between facets and personality domains with impulsivity: New evidence using the *DSM-5* Section III framework in patients with substance use disorders. *Personality Disorders: Theory, Research, and Treatment, 9*(5), 490-495
- Bavol, J.,& Orosova,O. (2015). Decision-making styles and their associations with decision-making competencies and mental health. *Judgment and Decision Making. 10,* 1, 115–122.
- Belet, S. D., & Guven, M. (2011). Meta-Cognitive Strategy Usage and Epistemological Beliefs of Primary School Teacher Trainees. *Universal Journal of Educational Research 4(1),* 165-172.
- Bierman, D., J., Arnaud, D., & Axel, C. (2005). Intuitive decision making in complex situations: somatic markers in an artificial grammar learning task. *Cognitive, affective and behavioural neuroscience,5*(3). 297-305.

- Boer, D.A., Peeters. M., & Koning,I. (2017). An Experimental Study of Risk Taking Behavior Among Adolescents: A Closer Look at Peer and Sex Influences. *The Journal* of *Early Adolescence, 37(18).* 49-74.
- Cawley III, J.M., Martin, J.E., & Johnson, A.J. (1999). A Virtues Approach to Personality. Retrieved on February 22, 2019 from www.ptypes.com/adventurous.html
- Deniz, M.,N. (2011). An Investigation of Decision Making Styles and the Five-Factor Personality Traits With Respect To Attachment Styles. *Educational Sciences: Theory and Practice 11*(1),105-113 ·
- Diaz, I. (2015). Training in Metacognitive Strategies for Students' Vocabulary Improvement by Using Learning Journals. *Issues in Teachers' Professional Development*, *17*, (1), 87-102
- Dimdins, G., Sandgren, M., & Montgomery, H. (2014).Uncertainty avoidance and tough-mindedness as the psychological bases of political orientation. The 37th Annual Scientific Meeting of the International Society of Political Psychology (ISPP), July 4-7th, Rome, Italy.
- Dohrmann, A., Katalin, M., Schauer, Maggie, S. & Thomas, E. (2017). Relations between traumatic stress, dimensions of impulsivity, and reactive and appetitive aggression in individuals with refugee status. *Psychological Trauma: Theory, Research, Practice, and Policy, 9*, 137-144.
- Dorothea, D.B. (2016). Machiavellianism and manipulative interpersonal behavior in children. *Journal of Experimental Social Psychology, 6* (1), 77-99.
- Driver, M. J., Brousseau, K. E., & Hunsaker, P. L. (1993). Five decision styles for executive and business success.(1st Ed.), *The dynamic decision maker,* (pp.267).San Francisco,Calif: Jossey-Bass.
- Dubas, J. S., Baams, L., Doornwaard, S. M. & Van Aken, M. A. G. (2017). Dark personality traits and impulsivity among adolescents: Differential links to problem behaviors and family relations. *Journal of Abnormal Psychology, 126*(7), 877-889.

- Eysenck, H. (1976). Theory of Personality. Retrieved on March 17, 2019 from https://www.researchgate.net/.../265064414_Eysenck's_Theory_of_Personality_and_S...
- Faustino, A. (2015). Engaging in an unusual and exciting activity. Retrieved on March 10, 2019 from https://www.adventureinyou.com/author/adventureinyou/
- Flavell, J. (1976). Metacognitive aspects of problem solving. In L. B. Resnick (Ed.), *The nature of intelligence,* (pp231-235). Hillsdale, New Jersey: Earlbaum
- Forgionne, G., & Kohli, R. (2000). Management support systems effectiveness: further empirical evidence. *Journal of Association for Information Systems,1* (3),1-39.
- Geertjan, O., Gretchen, B., & Margaret, K., (2006).Co-occurrence of depressive moods and delinquency in early adolescence: The role of failure expectations, manipulativeness, and social contexts *International Journal of Behavioral Development, 30* (5), 433-443.
- Giddy, J.K. (2016). Environmental Values and Behaviours of Adventure Tourism Operators: The case of the Tsitsikamma, South Africa. *African Journal of Hospitality, Tourism and Leisure, 5* (4), 45-68.
- Griffin, S. A., Lynam, D. R., & Samuel, D. B. (2017). Dimensional Conceptualizations of Impulsivity. *Personality Disorders: Theory, Research, and Treatment, 9* (4), 333-345.
- Harren, V. A. (1979). A model of career decision-making for college students. *Journal of Vocational Behavior, 14*, 119–133.
- Henderson, J.C. & Nutt, P.C. (1980). The influence of decision style on decision- making behavior. *Management Science, 26,* 371-386.
- Hufft,A.G. (2018). Retrieved on December 28, 2018 from *https://correctionalnurse.net/manipulation-a-significant-stressor*/

- Jain, D., Tiwari, G.K., & Awasthi, I.D. (2017). Impact of Metacognitive Awareness on Academic Adjustment and Academic Outcome of the Students. *The International Journal of Indian Psychology,5* (1),123-138.
- Jaleel , S. , & Premachandran, P. (2016**).** A Study on the Metacognitive Awareness of Secondary School Students. *Universal Journal of Educational Research, 4* (1), 165 – 172
- Jonathan J., Rolison, Y., Hanoch, S. , &Wood, P.(2014). Risk-Taking Differences Across the Adult Life Span: A Question of Age and Domain. *The Journals of Gerontology: Series B, 69 (6),* 870–880.
- Jung, C.G. (1971). Psychological Types. *Collected Works of C.G. Jung, 6*, (3rd ed.). Princeton, NJ: Princeton University.
- Kamp, V.D. M., Admiraal, W., Van Drie, J., & Rijlaarsdam, G. (2015). Enhancing Divergent Thinking in Visual Arts Education: Effects of Explicit Instruction of Meta-Cognition. *Br. J Educ Psychol, 85* (1),47-58.
- Kristine, S. & Tom, G.T. (2003). Decision-Making Styles: An Exploration of Preferences of On- and Off-Campus Faculty. *Journal of extension, 41,* (3) Retrieved on March 14, 2019 from https://www.joe.org/joe/2003june/a1.php
- Kumar, S. & Gautam, N. (2018). Decision Making Styles among Professor in Central University of Bihar - an Empirical Study of Predictors. *International Journal of Law and Society,1 (*2),84-91.
- Leea, T.H. & Tsengb, H. (2014). How personality and risk-taking attitude affect the behavior of adventure recreationists. *Journal of Tourism Space, place and Environment,17* (3), 307-331.
- Leonard, N. ,Kowalski, K.B. & Richard, S.R. (1999). Information processing style and decision making. *Journal of Organizational Behavior, 20* (3) ,407 - 420 .
- Leslie, F. & Chris, J. J. (2012).The social desirability of toughmindedness: A study among undergraduates. *Irish Journal of Psychology*, *19* (2) ,400-403 ·

- Lysaker, P.H., Emily, G.E., Moritz, S., & Schweitzer, R.D.(2018).Psychology Research and Behavior Management. *Psychology Research and Behavior Management Dove, 11, 3*41–351.
- Malraux, A.(1933). If a man is not ready to take risk. Retrieved on February 25, 2019 from https://en.wikiquote.org/wiki/André_Malraux.
- McGinnis, A.L. (2014). Tough mindedness. *Age Life Style personality development for a changing world*. Retrieved on February 25, 2019 from *agilelifestyle.net/tough-minded.*
- Myers, I.B. (1962). *Myers-Briggs type indicator*. Palo Alto, CA: Consulting Psychologists Press. Retrieved on March 19, 2019, from http://dx.doi.org/10.1037/14404-000
- Okike, E.U. & Olanrewaju A. A. (2014). *Journal of Applied Information Science and Technology, 7*(1), 27-34.
- Oldham, J. M. (2017). Adventurous Personality Styles. *The New Personality Self-Portrait: Why You Think, Work, Love, and Act the Way You Do*. Rev. ed. New York: Bantam, 1995. Retrieved on March 3, 2019 from https://infidelityrecoveryinstitute.com/.../The-New-Personality-Self-Portrait-%23U2013.
- Politova, G., & Hilendarski, P. (2014). The sense of adventure as a motivation for a prosocial behavior. *The Journal Positive Psychology, 10* (5), 458- 462.
- Rowe, A. J., & Mason, R. O. (1987). Managing with style: A guide to understanding, assessing and improving decision making. San Francisco, California: Jossey Bass.
- Ryumshina, L., & Nagibin, M. (2013). Family Influence On Formation Of Children's Manipulative Attitudes. *International Journal of Cognitive Research in science, engineering and education, 1*(1), Retrieved on December, 31, 2018 from www.ijcrsee.com.

- Saxe, R., & Offen, S. (2010). Seeing ourselves: What vision can teach us about metacognition. In Dimaggio,G. & Lysaker, P.H. (Eds.), *Metacognition and severe adult mental from research to treatment* (pp 13-30). London: Routledge.
- Scott, S. G., & Bruce, R. A. (1995). Decision-making style: The development and assessment of a new measure. *Educational and Psychological Measurement, 55* (5), 818–831.
- Sensation seeking. Retrieved on March 3 2019 from https://www.psychologytoday.com/us/basics/sensation-seeking.
- Shalev, I., & Sulkowski, M.L. (2009). Relations between distinct aspects of self-regulation to symptoms of impulsivity and compulsivity. *Personality and Individual Differences, 47*,84-88.
- **S**ternberg, R. J., & Li-fang, Z. (2001). Perspective on thinking, learning and cognitive styles. *Learning and Individual Differences, 19* (2),299-303
- Talekar,P.S. & Fernandes, A. (2016). A Study of Metacognitive Awareness Among Secondary School Students in Mumbai. *Indian Journal Of Research PARIPAX,5*,(5), 54-55
- Uzaina, & Srivastava, A. (2016). A Study on Risk Taking Behaviour among Adolescents and Their Attachment with Parents and Peers**.** *The International Journal of Indian Psychology, 3* (4) ,59 .
- Vang, Chia-Yu. (2015). "Exploring general versus task – specific assessments of metacognition in university chemistry students: a multitrait- multimethod analysis. *Research in science education,45,* 4.
- Yerdelel-Damar, S. & Pesman, H. (2013)."Relations of gender and socioeconomic status to physics through metacognition and self efficacy". *Journal of educational research,106,* 4.